

# IPM measurements, before and after the shutdown

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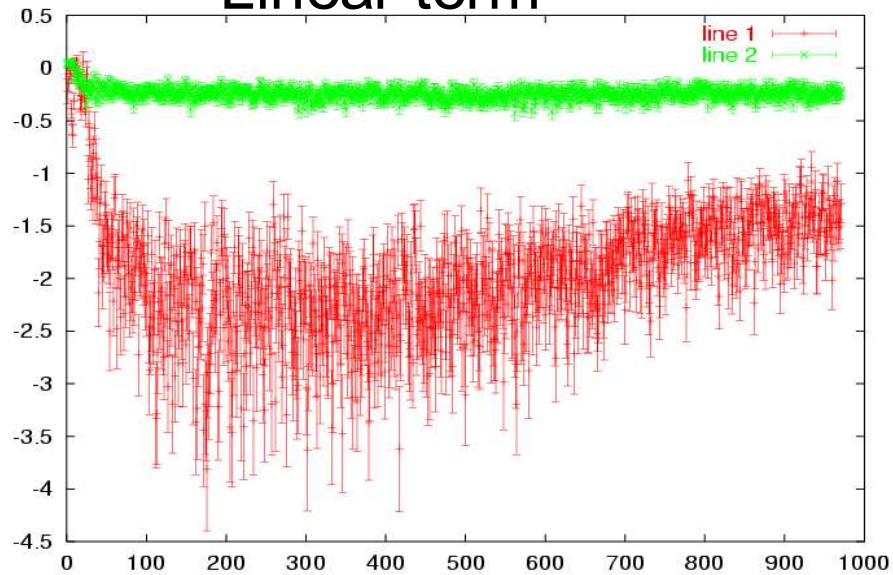
1. Before == 1<sup>st</sup> of May, where we had record running
2. After == 11/25/03 (although more data are available)
3. The beam profiles are fit to a gaussian plus first degree polynomial
  - × Large polynomial coefficients mean high “bgnd”
  - × The beam intensity “after” is ~ 70% of before, so sigmas are expected smaller for “same” beam behaviour

General conclusion: the beam is wider and noisier in the vertical

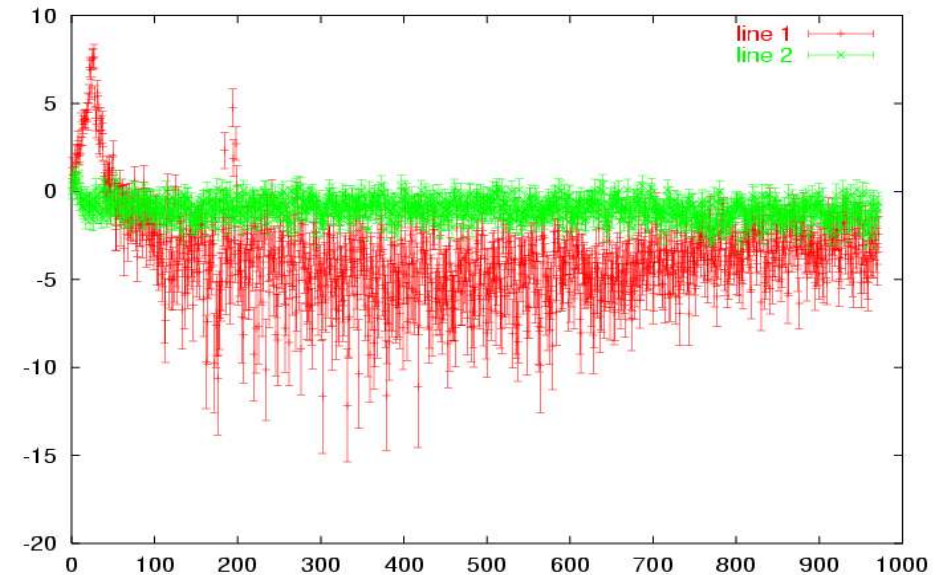
General observation: moving the beam around @ the IPM location at ~-2mm shows a HUGE increase in BGND (scraping???)  
moving it @~+2mm reveals a second “bump” so the “BGND” could be betatron oscillation (???)

# Old vs New, vertical

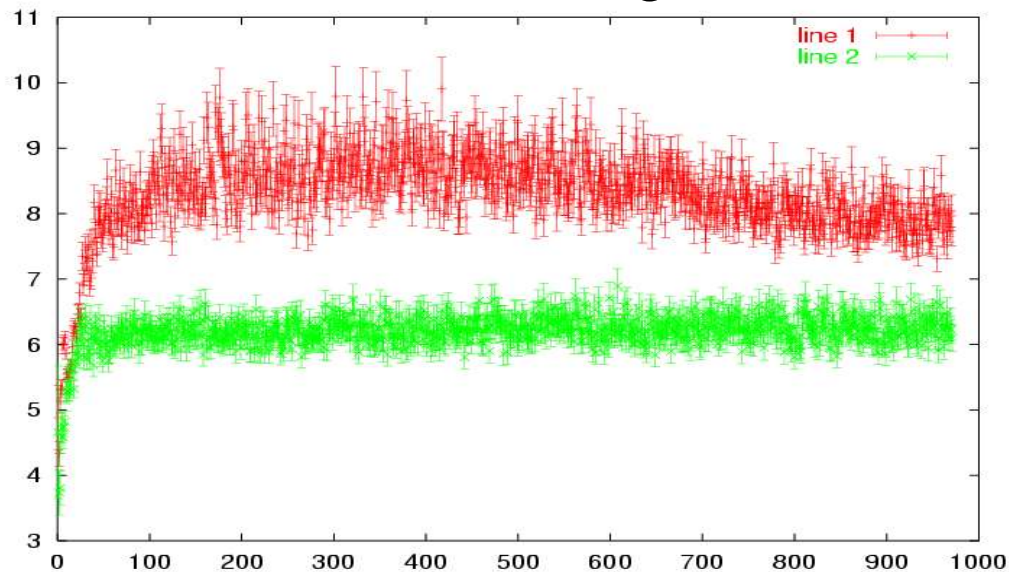
## Linear term



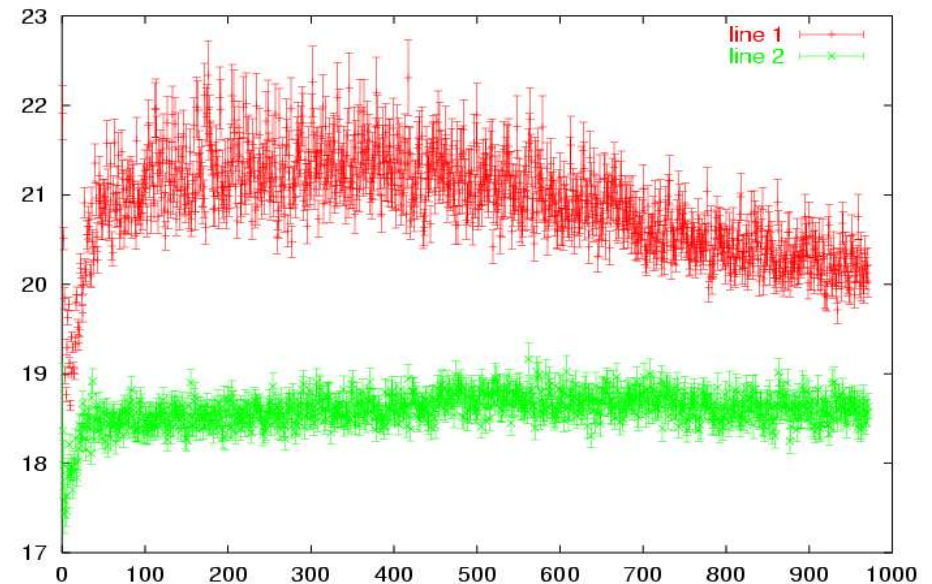
## Constant term



## Gaussian sigma



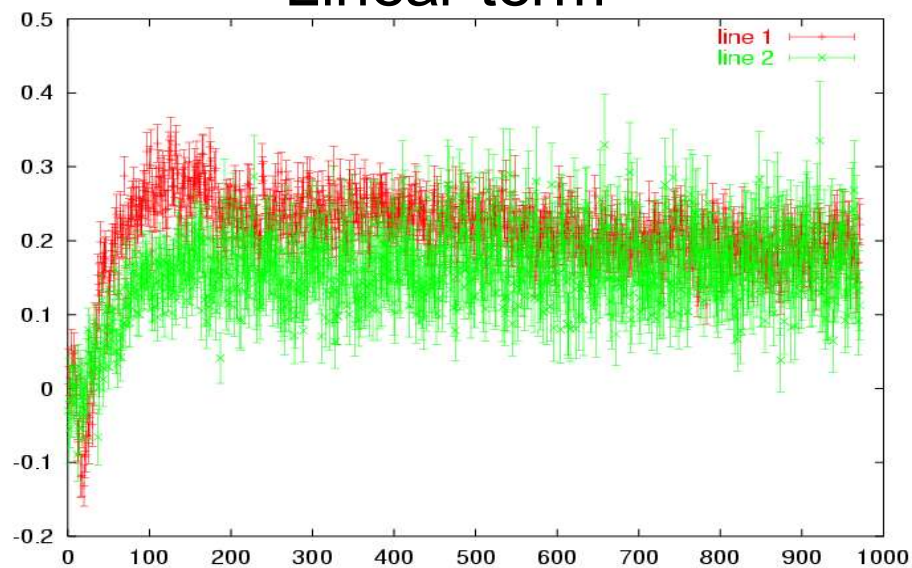
## Gaussian mean



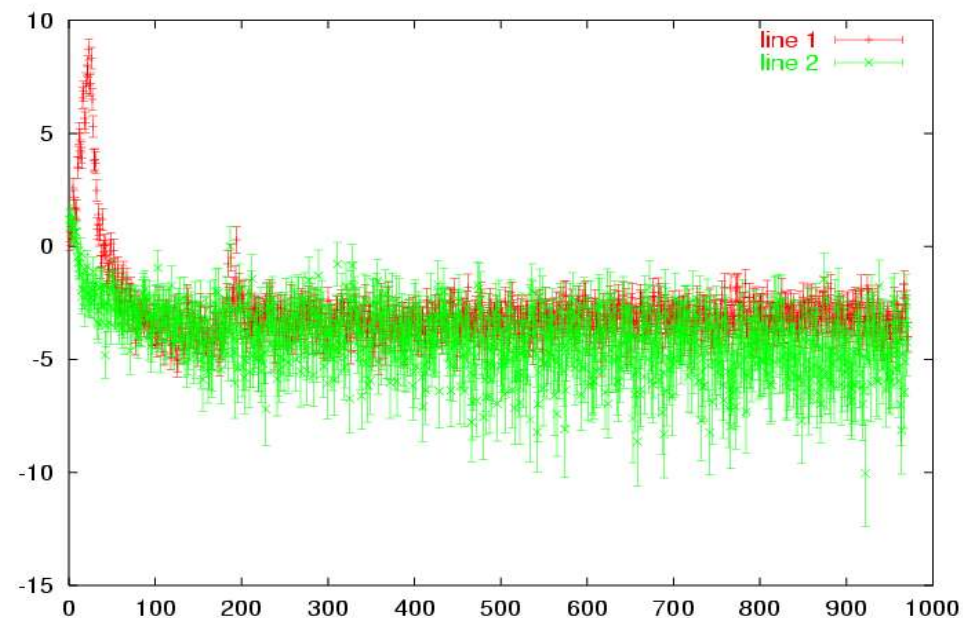
All plots are vs turn number

# Old vs New, horizontal

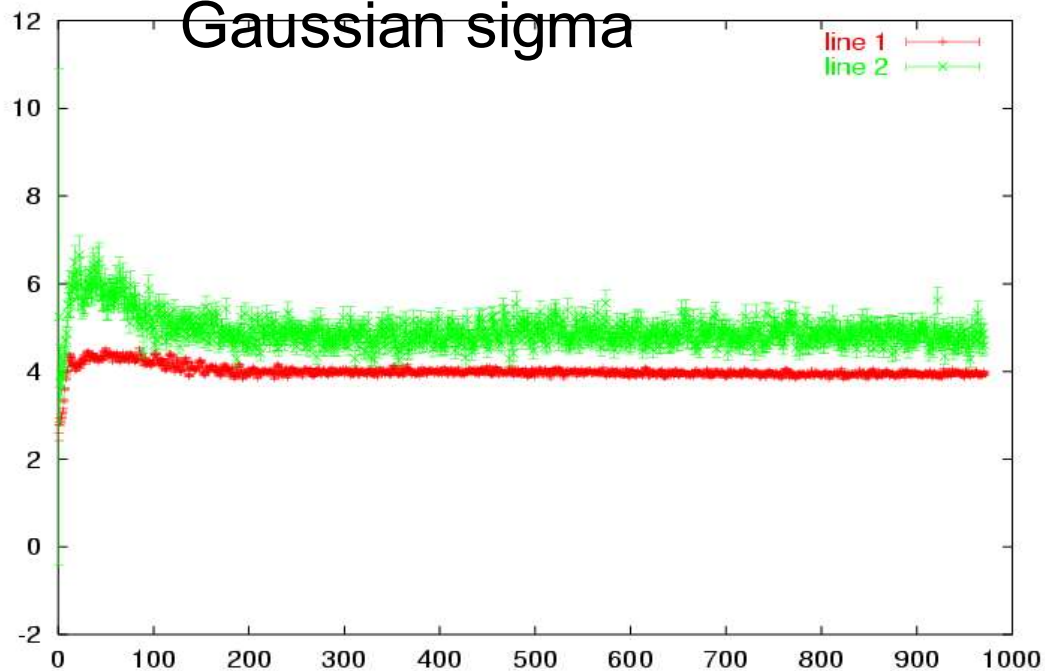
## Linear term



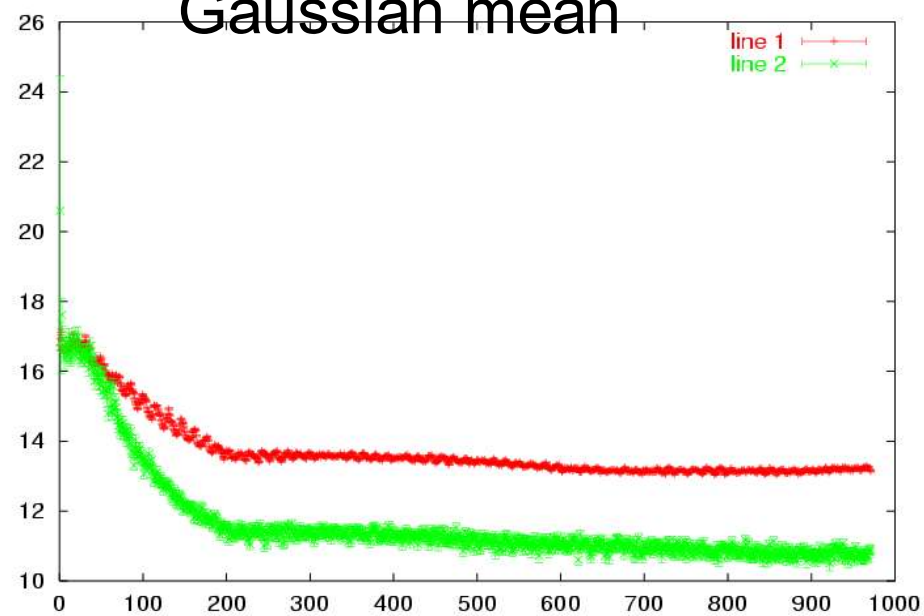
## Constant term

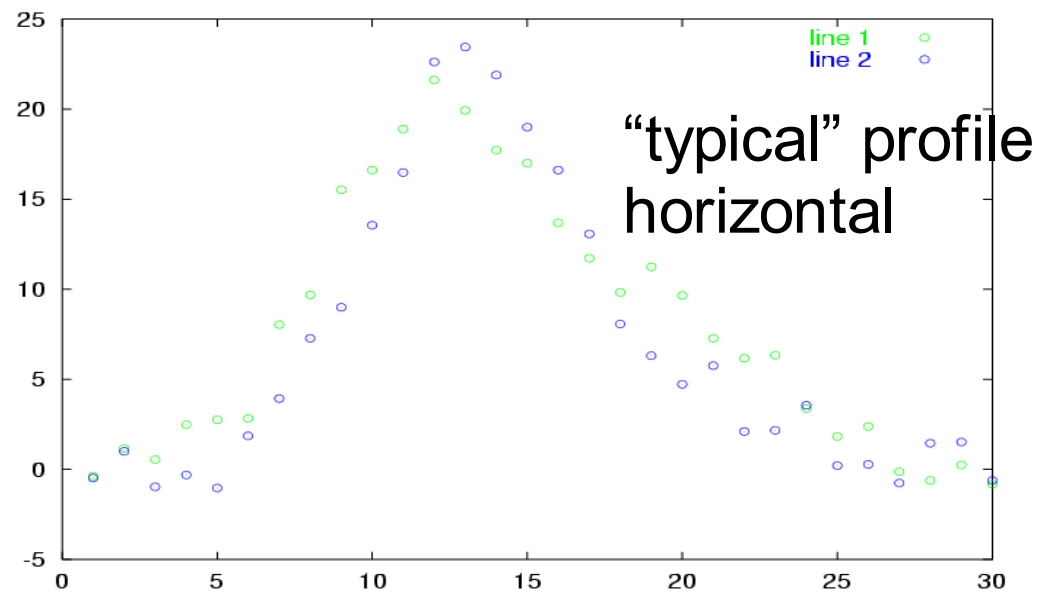
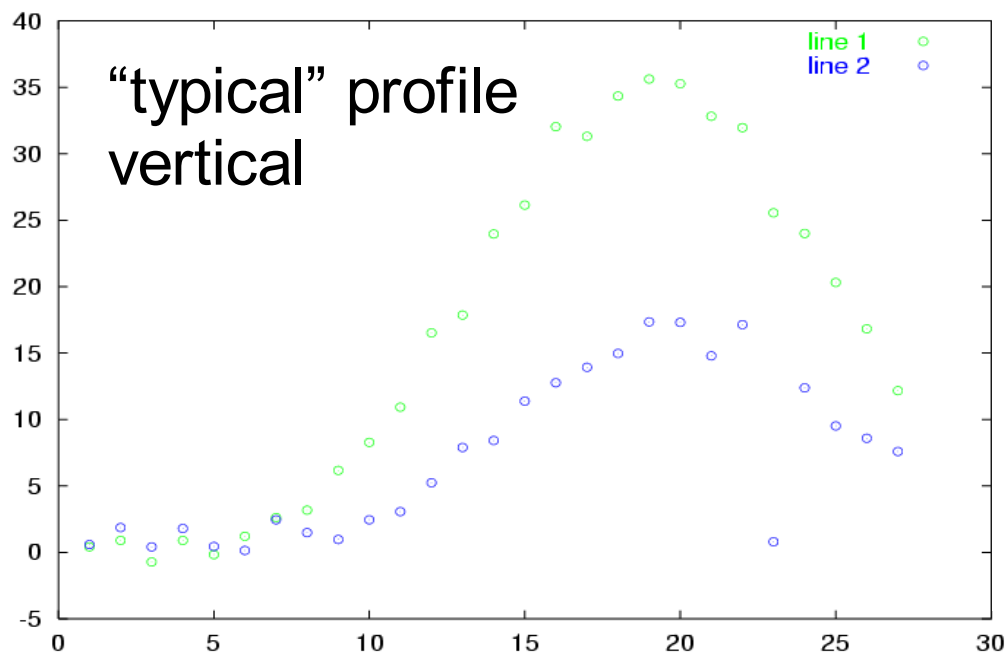
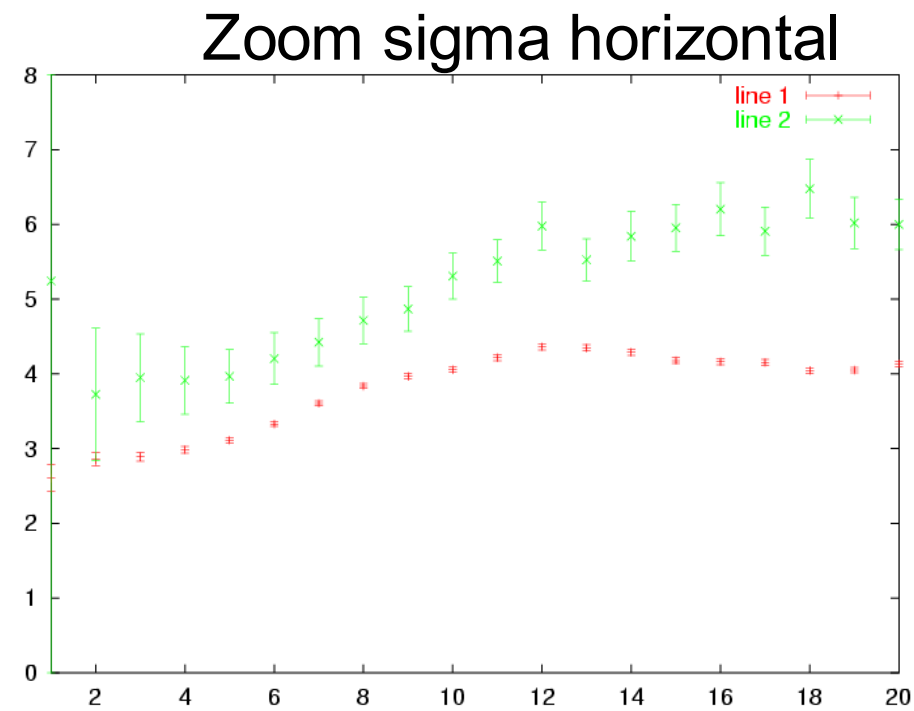
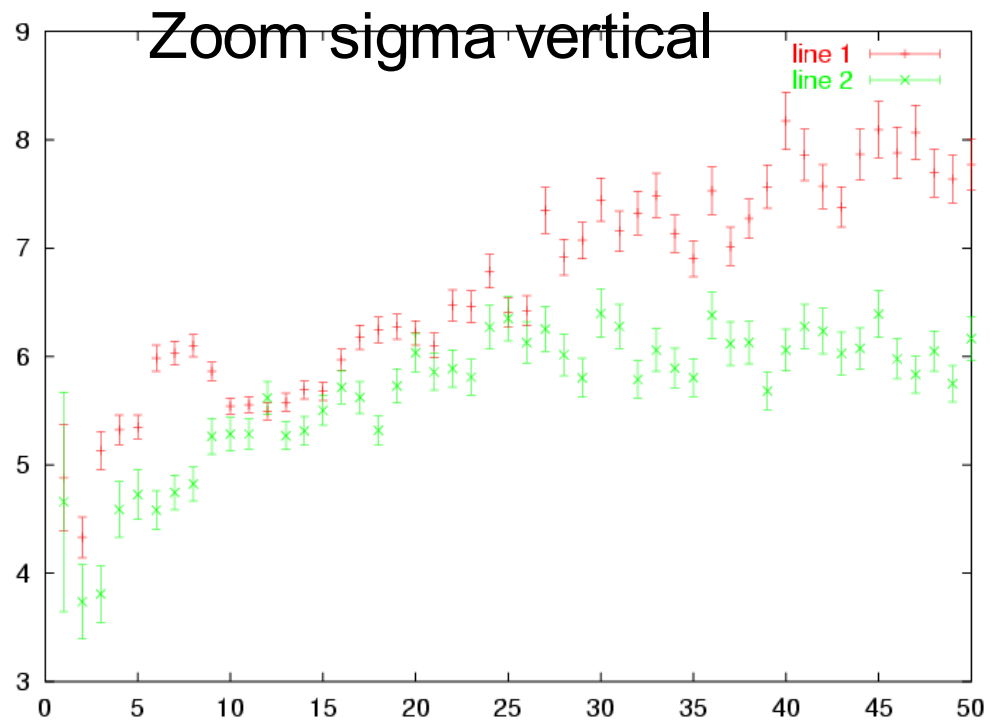


## Gaussian sigma



## Gaussian mean





# Summary

The horizontal plane looks OK.

Profiles look similar to pre-shutdown  
width is smaller, as expected from less beam current

The vertical plane has problems.

The beam is wider and there is strong evidence for large bgnd,  
either due to scraping or oscillations

Moving the beam - 2 mm at the IPM (Long 5), produces a huge  
spray on the detector, so it could be that we do have an  
aperture restriction either directly upstream or downstream  
(back-scatter) of the IPM